

Robert John BRISCOE, *et al.*
Serial No. 10/593,442
November 9, 2009

AMENDMENTS TO THE DRAWINGS:

Two (2) sheets of annotated drawings illustrating Figs. 1 and 2 with proposed changes thereto shown in red ink are attached hereto, accompanied by two (2) sheets of replacement drawings incorporating the amendments.

Attachments: Replacement Sheets: 2
Annotated Sheets Showing Changes: 2

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REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

As the Examiner is already aware, there is a related copending application Serial No. 10/593,423 being concurrently prosecuted and examined by this same Examiner. In accordance with what appears to be the currently preferred "duty of disclosure" protocol, the Examiner's attention is nevertheless explicitly directed to the attached Form PTO/SB/08a and referenced documents including any prior issued office actions in this related case, as well as all prior art cited therein which is not already of record herein. The IDS Fee for this stage of prosecution is also attached.

Should this Examiner prefer to continue receiving periodic updates concerning the status and/or information from the related case also being examined by this Examiner, then it is respectfully requested that such desire be made of record and that the undersigned be notified of same so that an attempt may be made to continue with such periodic updates.

The entire specification and claims have been reviewed and amended so as to change "English" spelling of English-language words to "American" spelling of English-language words. If there are any instances that have been inadvertently overlooked, the Examiner is authorized to make similar changes via an Examiner's Amendment.

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As required, a replacement drawing sheet adding the legend "prior art" to Fig. 1 is attached. In addition, a corrected drawing sheet for Fig. 2 is attached so as to correct one of the reference characters (26) to the correct reference numeral (20) as already referenced in the specification.

Accordingly, all outstanding formality-based issues are now believed to have been resolved in the applicants' favor.

The rejection of claims 1, 4, 6, 8, 11 and 13 under 35 U.S.C. §102 as allegedly anticipated by Cain '469 is respectfully traversed.

The above amendments to the independent claims are not believed to change their scope, but rather to help clarify some of the novel features already recited therein in substance.

For example, it should be clear that the applicants' claimed invention requires an intermediate node to select a preferred manner for forwarding data. In addition, the terms "upstream" and "downstream" have been somewhat more explicitly recited. Original independent claims 7 and 14 have been reduced to dependent claims for further clarity.

As a result of the above clarifying amendments, it should be clearly understood that the claimed "intermediate node" and methodology concerning its operation is clearly distinguished from a node performing according to prior art techniques where

quality of service (QoS) routing is based on routing tables. In particular, the applicants' intermediate node selects a manner of treatment for forwarded data not based simply upon any characterization information received from any upstream node, but rather it is restricted to past characterization information dependent upon information fed back from a specific node defined as the "provider node" in the context of the specifically defined path from the provider node to the receiver node to which the claims relate. By virtue of this arrangement, the applicants' intermediate node is not dependent upon receiving normal, regular routing updates, as is the case with prior art techniques relying upon routing tables. Instead, the applicants' arrangement may change the basis upon which it selects the manner for forwarding data traversing a path from a provider to a receiver node – perhaps even as often as it receives data traversing that path.

To illustrate this advantage, it is instructive to consider preferred exemplary embodiments in which data traverses a network in the form of packets having IP headers containing relevant path characterisation information. Using the applicants' invention, an intermediate node would be able to change the basis upon which it selects the manner to forward data packets traversing a path from a provider node to a receiver node as often as it receives packets traversing that path that carry, in their headers, path characterization information dependent on information fed back from the relevant destination to the relevant source.

To enable such frequent routing updates by means of the prior art technique of distributing updated routing tables would be hugely wasteful of network resources.

It should be noted that embodiments of the present invention do not necessarily preclude the provision of updated routing tables to nodes as well, but using the applicants' invention, these would generally need to be distributed far less frequently than is the case when only prior art techniques are used. For example, where routing table updates are currently distributed as frequently as one or more per minute, a network whose nodes are operating according to preferred embodiments of the claimed invention might operate with routing table updates being distributed as infrequently as one or less per hour or day.

Referring to the Examiner's comments concerning independent claims 1 and 8, Cain has been carefully considered, and the applicants are satisfied that it does not, in fact, disclose an intermediate node in accordance with claim 1, or a method in accordance with claim 8.

Referring first to claim 8, it should be noted that this relates to a method by virtue of which an "intermediate node" controls the treatment of data traversing a path across a data network. An intermediate node and its relationship to a provider node and to a receiver node within a data network are defined in the introductory sub-paragraph of this claim. It is then stated in this claim (as currently amended) that the steps of the method are:

- *receiving data from an upstream node;*
- *receiving path characterization information from an upstream node, and deriving therefrom information indicative of a characteristic of a portion of the path between the intermediate node and the receiver node;*
- *selecting, in dependence on said information indicative of said characteristic, a preferred manner of treatment for data to be forwarded; and*
- *forwarding data to a downstream node according to said preferred manner.*

These are all steps performed by the intermediate node itself. In particular, it will be noted that the “decision-making” step (i.e. “*selecting...a preferred manner of treatment for data to be forwarded*”) and the “active” step relating to the action taken (i.e., “*forwarding data...according to said preferred manner*”) as a result of this decision-making step are specifically stated to be steps performed by the intermediate node. Similarly, corresponding claim 1 relates to the intermediate node itself, and it will be noted that the elements thereof responsible for performing the respective functions (i.e., corresponding to the steps of the independent method claim) are likewise all elements of the intermediate node.

To the extent that any node or entity in Cain takes a decision regarding the selection of a manner of treatment for data to be forwarded (irrespective of whether or not this is based on information fed back from a downstream node/entity), it should be

noted that in Cain, only the "source node" can be said to perform a decision-making step in respect of data being forwarded that corresponds in any way to the "selecting" decision taken according to the present invention.

As a result of this fundamental difference between Cain and the claims of the present application, there is little actual correspondence between the elements of claim 1 and elements of the system disclosed in Cain, or between the steps of claim 8 and steps of the technique disclosed in Cain. In fact, only the initial step of "*receiving data from an upstream node*" in claim 8, and the corresponding initial element "*means for receiving data from an upstream node*" in claim 1, can correctly be regarded as corresponding to steps/elements disclosed in Cain. As a result, it will be understood that apparent similarities between the present invention and Cain from an initial review of Cain do not survive further more careful analysis.

The technique disclosed in Cain relates to routing within a network, and uses a feedback loop which is used for managing Quality of Service (QoS) in the network and, to this extent, such might initially appear to be potentially of relevance. However, the manner in which the feedback loop is used and the effect achievable by Cain as a result differ significantly from the present invention.

Cain relates to an admission control system, the nodes of which are operable to police admitted traffic to ensure that once accepted/admitted, the admitted traffic does not then exceed the criteria according to which it was accepted.

In more detail, in Cain, a "Route Request" message (RREQQ) is sent from a source node towards a destination node via a plurality of intermediate nodes, the message containing a traffic flow identifier setting out a required QoS for a route. The first intermediate node assesses whether it can meet the requirement and then accepts or rejects the request. If it accepts the request, it forwards the route request message to the next intermediate node, and this continues either until an intermediate node refuses the request or until the message reaches the destination node. If all the intermediate nodes do accept the request on a particular route to a predetermined destination, they then police forwarded traffic as explained above and provide the required QoS for the accepted request.

While it appears to be reasonable to regard the route request messages (RREQQ) of Cain as containing "path characterization information" of some sort as they traverse between the source node and the intermediate nodes (since they contain QoS metrics), it should be understood that they only provide information on the required/requested QoS metrics of the downstream path, not on the actual QoS metrics of the downstream path. Cain, therefore, does not provide any *"means...for deriving therefrom information indicative of a characteristic of a portion of the path between the intermediate node and the receiver node"*, since the QoS metrics in the route request messages of Cain only contain information relating to what will be required of a portion

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of the path between the intermediate node and the receiver node, and do not, therefore, contain information relating to any actual characteristics thereof.

Furthermore, in Cain, the intermediate nodes only perform the task of accepting or rejecting the request based on QoS information relating to the upstream path (i.e., because the QoS metrics in the "RREQP" messages do not depend on information received from the destination). Therefore, while clearly playing a role in enabling routing decisions to be taken in a network, the intermediate nodes in Cain do not actually perform a role corresponding to the role that is performed by an intermediate node in accordance with applicants' claimed invention.

Given such fundamental deficiencies of Cain as already discussed, it is not necessary at this time to provide detailed further discussion of additional deficiencies *vis-à-vis* other aspects of the rejected claims. Suffice it to note that, as a matter of law, it is impossible for any claim to be anticipated unless the cited reference teaches each and every feature of the rejected claims.

The rejection of claims 7 and 14 under 35 U.S.C. §102 as allegedly anticipated by Saadawi '007 is also respectfully traversed.

Since these claims have now been revised to depend from independent claims 1 and 8, respectively (against which Saadawi is also noted as not being particularly

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pertinent), this ground of rejection has been mooted and it is not believed necessary at this time to provide further detailed reasons regarding deficiencies of Saadawi.

The rejection of claims 2-3 and 9-10 under 35 U.S.C. §103 as allegedly being made "obvious" based on Cain in view of Saadawi is also respectfully traversed.

Once again, fundamental deficiencies of Cain have already been noted above with respect to parent claims 1 and 8. Saadawi does not supply those deficiencies and, accordingly, it is not necessary at this time to detail additional deficiencies of this allegedly "obvious" combination of references with respect to the additional recitations/aspects of these rejected claims. Suffice it to note that, as a matter of law, it is impossible to support even a *prima facie* case of "obviousness" unless the cited prior art teaches or suggests each and every feature of the rejected claims.

The rejection of claims 5 and 12 under 35 U.S.C. §103 as allegedly being made "obvious" based on Cain in view of Seidel '290 is similarly respectfully traversed.

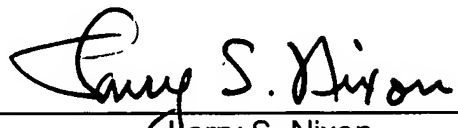
In particular, Seidel is not particularly relevant with respect to the recitation of parent claims and does not supply the deficiencies already noted with respect to Cain. Accordingly, further detailing of additional deficiencies is not necessary at this time.

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Accordingly, this entire application is now believed to be in allowable condition,
and a formal notice to that effect is earnestly solicited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 
Larry S. Nixon
Reg. No. 25,640

LSN:lef

901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100